

[0054] Thereafter, fasten tight the connection member 20 (rotate the connection member 20 in direction toward the mounting member 10) to force the first tapered surface 23 of the connection member 20 against the beveled edge 421 of the clamping member 42 of the packing device 40, thereby radially inwardly compressing the packing sleeve 41 to wrap the packing sleeve 41 about the periphery of the cable 90, thereby achieving a second packing effect at a second packing area.

[0055] Thus, the cable 90 and the flexible conduit 91 are compressed by the packing sleeve 41 and the auxiliary clamping sleeve 50 and prohibited from displacement relative to the cable and flexible conduit gland assembly, and thus, the invention provides enhanced protection and multiple packing, airtight, waterproof, dustproof and anti-tensile effects.

[0056] Further, in addition to the protection of the mounting member 10 and the outer cap 30, the cable 90 and the flexible conduit 91 are also well protected by the connection member 20, i.e., the invention provides long distance and large area protection to the cable 90 and the flexible conduit 91.

[0057] In general, the use of the connection member and packing devices in the cable and flexible conduit gland assembly provides enhanced protection and multiple packing, airtight, waterproof, dustproof and anti-tensile effects. Similar to the principle of tug of war that more people involve in a tug-of-war, a relatively greater force will be produced. The invention uses multiple packing devices to enhance the packing, airtight, waterproof, dustproof and anti-tensile effects. Thus, the invention is practical for dynamic mechanical application, outdoor application, as well as applications in deep-water environments or high explosive atmospheres.

[0058] It is worth mentioning that the invention provides an externally forced design to obtain a high IP rating and to eliminate the drawback of the internally forced prior art designs, making the cable and flexible conduit gland assembly practical for use under severe weather condition or in a deep-water environment.

[0059] Further, the user can add one or multiple extra connection members 20 to the cable and flexible conduit gland assembly to meet different industrial application requirements. By means of the second outer thread 21 and first inner thread 24 of each connection member 20, multiple connection members 20 can be screw-connected between the mounting member 10 and the outer cap 30 to provide enhanced protection and multiple packing, airtight, waterproof, dustproof and anti-tensile effects.

[0060] The aforesaid cable 90 is protected by the flexible conduit 91 and the cable and flexible conduit gland assembly, practical for outdoor application. After installation, the invention provides waterproof, dustproof, anti-impact, vermin-proof and anti-UV effects.

[0061] The aforesaid flexible conduit 91 should be interpreted broadly and should not be confined to one structure or material. Further, the flexible conduit 91 can be a coiled tube, or any of a variety of other flexible tubes made of metal, plastics or rubber.

[0062] In one alternate form of the present invention, as shown in FIGS. 4-6, the cable and flexible conduit gland assembly 100 comprises a mounting member 10, two connection members 20, an outer cap 30, a (first) packing device 40, a second packing device 400, auxiliary clamping sleeve

50, a locking member 60, and a gasket ring 70. In this embodiment, the two connection members 20 are connected in series; the second packing device 400 is mounted in the first axial hole 22 of one connection member 20 and the second axial hole 25 of the other connection member 20, comprising a second packing sleeve 4001 that defines therein an axially extended through hole 4011, and a second clamping member 4002 sleeved onto the second packing sleeve 4001. Further, the second packing device 400 and the (first) packing device 40 are identical and exchangeable.

[0063] In another alternate form of the present invention, a plurality of connection members 20 and two than two second packing devices 400 are used. In this embodiment, one second packing device 400 is mounted in the first axial hole 22 of one connection member 20, and the second axial hole 25 of the other connection member 20.

[0064] Thus, by means of increasing the number of the connection member 20 to hold down the cable 90 and the flexible conduit 91, the invention multiplies the packing, airtight, waterproof, dustproof and anti-tensile effects, allowing the cable and flexible conduit gland assembly to be used in severe weather environments, deep-water environments or high explosive atmospheres.

[0065] Further, the gasket ring 70 comprises an annular water-sealing flange 71 at each of two opposite sides thereof for stopping against the stop flange 13 of the mounting member 10 and the locking member 60 to seal out moisture and dust particles.

[0066] Referring to FIG. 7, in order to prevent displacement of the cable 90 relative to the flexible conduit 91 due to that the outer diameter of the cable 90 is smaller than the inner diameter of the flexible conduit 91, the auxiliary clamping sleeve 50 further comprises a clamping skirt 57 extended from one end thereof remote from the annular hooked portion 52. The diameter defined in the clamping skirt 57 is smaller than the inner diameter of the auxiliary clamping sleeve 50. When the auxiliary clamping sleeve 50 is radially inwardly compressed to wrap about the outer perimeter of the flexible conduit 91 upon threading of the outer cap 30 onto the second outer thread 21, the clamping skirt 57 is also radially inwardly compressed to wrap about the periphery of the cable 90, achieving extra airtight, waterproof and anti-tensile effects.

[0067] In still another alternate form, as shown in FIG. 8, the clamping member 42 is formed at an inner side of the first outer thread 11 of the mounting member 10, i.e., the first outer thread 11 and the clamping member 42 are made in integrity. Thus, this embodiment reduces the number of component parts and saves the installation cost.

[0068] Referring to FIG. 9, still another alternate form of the present invention is shown for locking a flexible conduit 92 and a cable 90 to, for example, a junction box. According to this embodiment, the cable and flexible conduit gland assembly 100 comprises a mounting member 10 having a first outer thread 11, at least one connection member 20 each comprising a second outer thread 21, a first axial hole 22, a first tapered surface 23 and a first inner thread 24 that is threaded onto the first outer thread 11, an outer cap 30 comprising a second tapered surface 32 and a second inner thread 33 that is threaded onto the second outer thread 21, a packing device 40 that comprises a packing sleeve 41 mounted in the mounting member 10 and the first axial hole 22 of the connection member 20 and defining therein a through hole 411 and a clamping member 42 sleeved onto